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Family Branchiostegidae

The Tile Fishes

Body elongate, fusiform, compressed.
Head large, compressed. Head
moderate, deep, compressed. Snout
usually long, deep. Eye small, high,
median. Mouth ^{protractile} moderate or large,
low, terminal. Maxillary not reaching
below eye. Teeth firm, rather
strong, none on palate. Premaxillaries
protractile, usually with one or
more blunt posterior canines.
^{nostrils 2 each side.} Opercles unarmed. Gill membranes
separate or but slightly united.
Gills 4, long slit behind fourth.
Pseudobranchiae well developed.
Lower pharyngeals separate.
^{air bladder developed.} Bones of head not greatly developed,
not cavernous, without suborbital

Füzeték, Budapest, vol. 5, 1881, p. 158
 (Singapore). — Meyer, Ann. Soc. Espan.
 Hist. Nat. Madrid, vol. 4, 1885, p. 22 (Manado,
 Celebes). — Day, Fauna British India, vol. 2,
 1889, p. 90. — Elera, Cat. Fauna Filip.; vol. 1,
 1895, p. 529 (Cebu).

Theraps margaritifera Steindachner, Sitzb.
 Akad. Wiss. Wien, band 60, heft 1, 1870, p.
 565 (Singapore).

Resembles Siganus punctatissimus in
 its general color pattern but the light
 dots not so numerous and the body
 more elongate.

Seychelles, India, East Indies,
 Melanesia, China, Japan. Munro Park's
 original account describes the color
 as greenish yellow above with white
 dots. Günther, quoting Bleeker, gives
 the forehead and snout with transverse
 blue streaks, which may be some other species.

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bony stay and opercles usually unarmed. Vertebrae 24 to 30, ^{of with 13 to 15 caudal} or absent. Pyloric coeca few, Scales small, ctenoid. Lateral line ^{single,} distinct, complete, more or less concurrent with profile of back. Dorsal fin long, low, usually continuous, spinous portion always much less developed than soft portion, never obsolete. Anal long, with few feeble spines. Caudal forked or emarginate, deeply diphyccercal. Pectorals moderate, rays branched. Ventrals thoracic or subjugular, with spine and 5 rays, fins close together.

Fishes of tropical and temperate seas, some reaching a large size and living in deep water. Most with bright or delicate colors.

243 (Canton). — Bleeker, Journ. Ind.

Arch., vol. 2, 1848, p. 638 (Bima, Sumbawa).

— Bleeker, Verh. Batav. Genoot. (Nal. Ichth.

Jap.), deel 25, 1853, p. 15. — Bleeker, Nat.

Tijds. Ned. Indië, deel 13, 1856, p. 193 (Ternate);

p. 334 (Batavia, Biliton, Bali, Batu, Celebes,

Ternate); l.c., deel 15, 1858, p. 200 (Goram

Island), p. 242 (Singapore); l.c., deel 17,

1858-59, p. 130 (Atapoepe, Timor); l.c., deel

20, 1859-60, p. 141 (Badjia, Boni). — Bleeker,

Nat. Soc. Sci. Ind. Nêerb., deel 1, no. 5, 1856,

p. 6 (Amboina); l.c., deel 3, no. 3, 1857-58,

p. 3 (Kioio), p. 6 (Japan).

Amphacanthus margaritifer Bleeker, l.c., deel
1, no. 3, 1856, p. 4 (Manado).

Xenthis margaritifera Bleeker, Ned. Tijds. Dierk.,
deel 1, 1863, p. 254 (Wahai, Ceram), p. 270 (Atapoepe,

Timor). — Day, Fishes of India, pt. 1, 1875, p.

167, plate 40, fig. 5. — Károli, Termesz.

Giünther, Cat. Fish. Brit. Mus., vol. 3, 1860, p.
317 (East Indies). —

Analysis of Genera

a.¹ Caulolatilinae. Soft dorsal and anal rays 22 to 27. ~~dorsal spines~~

b.¹ Dorsal spines 7 to 9; ventrals thoracic. Caulolatilus.

b.² Dorsal spines 4; ventrals subjugular. Prolatilus.

a.² Branchiosteginae. Dorsal and anal rays 13 to 15.

c.¹ no labial barbel or predorsal adipose appendage.

Branchiostegus.

c.² Labial barbel at hind end of mouth; predorsal with large adipose appendage.

Lopholatilus.

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Genus Caulolatilus Gill

Caulolatilus Gill, Proc. Acad. Nat. Sci. Philadelphia, p. 240, 1862. (Type Latilus chrysops ^{Valenciennes} ~~Cuvier~~, monotypic.)

Leikaya Cooper, Proc. Cal. Acad. Sci. ^{vol. 3,} ~~vol. 1,~~ p. 72, 1863. (Type Latilus princeps Genus, monotypic.)

Leikaya Milne-Edwards and Haine 1851, in corals, not involved.)

15264. and 15403. Titulayan Island.
June 18, 1909. Length 188 to 240 mm.

6307. Bugsuk Island, Balabac.
January 5, 1909. Length 192 mm.

A527. Bulan Island. September 13, 1909.
Length 305 mm.

A581. Busbus Point, Siasi Island.
September 20, 1909. Length 280 mm.

9822. Cagayan, Sulu Island. January 8,
1909. Length 228 mm.

9949, A1523, A1524, 14270 [2181]. Doc Can
Island, Sulu Sea. January 7, 1909. Length
177 to 248 mm. Generally olivaceous fading
to greenish yellow, back with rather
smoky purplish wash. Side of head
brighter greenish yellow, with 3 distinct
purplish stripes under eye and parallel
with lower limb of preopercle. Top of head
with ground color showing as brownish
yellow spots in broad network of very

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Body elongate, deepest anteriorly and tapering down to rather narrow caudal peduncle. Head rather small, deep, upper profile arched. Snout long. Eye small, little advanced in head. Mouth moderate, but little inclined, jaws subequal. Lips fleshy. Maxillary narrow, not reaching below eye. Teeth in villiform bands, with outer row of stronger more acute teeth; hind teeth in each jaw canine like, directed forward, posterior upper largest. Preopercle edge serrated, serrae uniform. Opercle with blunt, flat spine. Gill membranes narrowly connected, form fold across isthmus. Gill rakers short, stout. Branchiostegals 6. Scales small, firmly adherent, ctenoid. Lateral Vertebrae 27, of which 15 caudal. Line continuous, concurrent with profile of back. Dorsal with 7 to 9 slender,

15
pointed, graduated, with 22 to 27
soft rays. Anal like soft dorsal,
with 1 or 2 small spines and
over 20 soft rays. Caudal forked.
Pectoral moderate, placed in lower
half of body. Ventral moderate,
thoracic.

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Caulolatilus chrysops (Valenciennes)

Latilus chrysops Valenciennes, Hist.
Nat. Poiss., vol. 9, p. 496, 1833 (type
locality, "sur les côtes du Brésil").

— Günther, Cat. Fish. Brit. Mus.,
vol. 2, p. 253, 1860 (West Indies).

Caulolatilus chrysops Gill, Proc.
Acad. Nat. Sci. Philadelphia,
p. 240, 1862 (reference); p. 67, 1865
(reference).

1. Specimens with very numerous spots on body.

15407. Titulayan Island. June 18, 1909.
Length 240 mm.

6510. Balikias Bay. July 17, 1908.
Length 205 mm.

8360. Buang Bay, Talajit. May 15, 1909.
Length 250 mm.

A 1230. Gomomo Island. December 3, 1909.
Length 233 mm.

7279. Gigoso Point, Luinapuan dan Bay, Samar Island. July 28, 1909. Length 160 mm.

A 1429. Kapopozang. December 28, 1909.
Length 245 mm.

A 1314. Labuan, Blanda Island. December 14, 1909. Length 263 mm.

8313. Lode Bay, Nestacado Island. March 13, 1909. Length 228 mm.

9085. Malhou Island. July 27, 1909.
Length 227 mm.

17
Caulolatilus cyanops Poey

Caulolatilus cyanops Poey, Repert.
Hist. Nat. Cuba, vol. 1, p. 312, 1867
(type locality, Cuba).

— Jordan, and Evermann, Bull. U. S.
Nat. Mus., no. 47, pt. 3, p. 2278, 1897
(copied).

6588. Maricaban Island. July 21, 1908.

Length 228 mm.

A 110. Philippines. Length 252 mm.

7239. Masinloc. Length 260 mm.

A 374. Philippines. Length 225 mm.

7258. Port Matalvi, Luzon. November 23, 1908.

Length 253 mm. Dusky orange, spots pale blue, largest on head and breast. None on dorsal or caudal, few on anal.

A 1327. Tifu Bay. December 10, 1909. Length 260 mm.

6439. Tilig, Lubang. July 14, 1908. Length 277 mm.

A 1368. Basa Island or reef, Celebes. December 17, 1909. Length 253 mm.

A 939, A 951, 13302, 14883. Dodepa and Pasejogo Islands, Celebes. November 16, 1909. Length 140 to 245 mm.

A 873,

12789 and 20037. Limbe Strait, Celebes.

November 10, 1909. Length 138 to 220 mm. Spots dark blue, bordered with black on fading. Spines of dorsal, anal and ventral spotted, with

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Caulolatilus microps Goode and Bean

Caulolatilus microps Goode and Bean,
Proc. U. S. Nat. Mus., vol. 1, p. 43,
1878⁽¹⁸⁷⁹⁾, (type locality, Snapper Bank
off Pensacola, Florida, in 35 fathoms).

— Jordan and Evermann, Bull. U. S.
Nat. Mus., no. 47, pt. 3, p. 2277, 1898
(Pensacola Snapper Banks).

Caulolatilus chrysops (not Dalencienne) Jordan
and Gilbert, Bull. U. S. Nat. Mus., no. 16,
p. 626, 1883 (compiled).

ground color plain dusky yellow.

18496. Tana Kebe Island, Celebes.

December 21, 1909. Length 114 mm.

A 1187. Bone Road, Gillolo Island.

December 1, 1909. Length 223 mm.

A 1054. Tidore Island, south of Ternate.

November 24, 1909. Length 235 mm.

A 1108. Ternate market. November 26, 1909.

Length 263 mm.

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Caulolatilus princeps (Jenyns)

Latilus princeps Jenyns, Voy. Beagle,
Fishes, p. 52, pl. 11, 1840 (type
locality, Chatham Island, Galapagos Archipelago).
— Günther, Cat. Fish. Brit. Mus.,
vol. 2, p. 253, 1860 (copied).

Caulolatilus princeps Gill, Proc. Acad.
Nat. Sci. Philadelphia, p. 68, 1865
(reference). — Jordan and Bollman, Proc.
U. S. Nat. Mus., vol. , p. 182, 1889 (Charles ^{and Albemarle} Islands).
— Jordan and Evermann, Bull. U. S. Nat.
Mus., no. 47, pt. 3, p. 2276, 1898; pt. 4, pl.
330, fig. 799, 1900. — Fowler, Proc.
Acad. Nat. Sci. Philadelphia, vol. 75,
p. 298, 1923 (La Jolla, California).
— Steindachner, Denk. Akad. Wiss. Wien, vol. 72, p.
35, 1902 (Galapagos Archipelago). — Snodgrass and Heller,
Proc. Washington Acad. Sci., vol. 6, p. 417, 1905 (Galapagos
Archipelago). — Starks, Proc. U. S. Nat. Mus., vol. 30, p.
799, 1906 (Callao, Peru). — Evermann and Radcliffe, Bull. U. S.
Nat. Mus., no. 95, p. 110, 1917 (Cobos de Afuera; Callao; Pisco).

12685. Endeavor Strait. December 23, 1908. 1307

Length 165 mm.

^{and 7383.}
7280, Gigoso Point, ^NLinapuyan Bay,
Samar Island. July 28, 1909. Length ¹⁴⁸⁵ 157 mm.

21324. Great Tobea Island. December 15,
1909. Length 94 mm.

9482. Guntea Island. December 20, 1908.
Length 228 mm.

11134. Lode Bay, Destacado Island.
March 13, 1909. Length 223 mm. [1340.]

5442, 5444, 7468, 7469. Maculabo Island.
June 14, 1909. Length 176 to 190 mm.

6061. Mansalay, Mindoro Island.
June 4, 1908. Length 278 mm.

6268. Medio Island, Galera Bay,
Mindoro. June 9, 1908. Length 270 mm.

8890. Near Palag Bay, Luzon. June 16, 1909.
Length 255 mm.

5921. Parang, Mindanao. May 23, 1908.
Length 245 mm.

DeKay anomala Cooper, Proc. Cal.
Acad. Sci., ^{vol. 3,} p. 70, fig. 17, 1864 (type
locality, Catalina Island, California).

Caulolatilus anomalous Gill, Proc.
Acad. Nat. Sci. Philadelphia, p. 68,
1865 (type).

— Streets, Bull. U. S. Nat. Mus.,
no. 7, p. 48, 1877 (Lower California).

— Jordan and Gilbert, Bull. U. S.
Nat. Mus., no. 16, ~~48~~ p. 625, 1883
(compiled).

Caulolatilus affinis Gill, op. cit. (type
locality, Cape St. Lucas, Lower
California).

? Caulolatilus cabezon Evermann and Radcliffe,
Bull. U. S. Nat. Mus., no. 95, p. 111, pl. 10,
fig. 3, 1917 (type locality, Chimbote, Peru;
Paita, Peru).

15618 [1720]. Casagoran, Mahon Island.
July 27, 1909. Length 164 mm. Spots on
head posteriorly ocellate with centers
bright blue and edges slate; rings
darker on spots of lower head and
breast.

7619. Cataingan Bay. April 17, 1908.
Length 143 mm.

257 [1017]. Cataingan Island, near
Balabac. December 29, 1909. Length 198 mm.
Blue spots on side of head and lower
contour of body rather small and on
upper part of body very numerous and
smaller than others.

13932. Cebu market. April 4, 1908.
Length 182 mm.

5424 and 13931. Cebu market. April 7,
1908. Length 146 to 180 mm.

8546. Cuyo Harbor. April 9, 1909.
Length 250 mm.

21

Genus Prolatilus Gill

Prolatilus Gill, Proc. Acad.
Nat. Sci. Philadelphia, p. 67,
1865. (Type Latilus jugularis
Valenciennes, orthotypic.)

Eyes approximated. Forehead
scaly. Hind edge of preopercle
denticulate. Caudal truncate.
Dorsal spines 4. Ventrals
subjugular.

22

Prolatilus jugularis (Valenciennes)

Latilus jugularis Valenciennes,
Hist. Nat. Poiss., vol. 9, p. 500,
pl. 279, 1833 (type locality, "sur
les côtes sablonneuses de
Valparaiso"). — Jenyns, Zool.
Voy. Beagle, pt. 4, Fish, p. 51,
1842 (Valparaiso). — Gay,
Hist. Chile, Zool. 2, p. 203, 1848.
— Günther, Cat. Fish. Brit. Mus., vol. 2, p.
253, 1860 (Chile).
— Steindachner, Zool. Jahrb. Suppl.
vol. 4, heft 2, p. 301, 1898.

— Delfin, Cat. Peces de Chile,
p. 83, 1901 (reference Chañaral,
Valparaiso).

Prolatilus jugularis J. F. Lebbott,
Proc. Acad. Nat. Sci. Philadelphia,
p. 475, 1899. — Fowler, Proc. Acad. Nat.
Sci. Philadelphia, vol. 78, p. 280, 1926
(Valparaiso).

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Depth $3\frac{3}{4}$, elongate, moderately compressed, deepest from head; head $3\frac{1}{4}$, width $1\frac{1}{2}$. Snout 3. in head, broad, convex, long as wide; eye $5\frac{1}{5}$, $1\frac{1}{2}$ in snout, 1 in interorbital; maxillary extends little beyond hind nostril, not quite to eye, expansion $3\frac{1}{2}$ in eye, length 3 in head; teeth in bands in jaws, outer row little enlarged in each; front nostril at last third in snout, hind one little larger and much closer to front one than eye; interorbital $3\frac{4}{5}$ in head, slightly concave; preorbital slightly less than orbit; hind preopercle edge entire; opercular spine small.

Scales firmly adherent, small on caudal base; 18 rows

across cheek. Lateral line arched little at first, dropping behind until midway at caudal base; tubes slender, small.

D. IV, 27, fourth spine $3\frac{1}{3}$ in head, graduated from first to last, fifth ray 3; A. II, 22, fifth branched ray 4; caudal $1\frac{3}{5}$; pectoral $1\frac{1}{8}$; ventral $1\frac{3}{5}$.

Clouded brown on back and above, whitish below.

Fins pale.

Chile.

Commercial Museum of Philadelphia.

~~Ac. N. H. P.~~ one example. Valparaiso, Chile. Length 620 mm. dried specimen.

25

Genus Branchiostegus Rafinesque

Branchiostegus Rafinesque, Analyse de la nature, p. 86, 1815. (Type Coryphaena japonica Houttuyn. Virtually, as Branchiostegus Rafinesque proposed to replace Coryphaenoides Lacépède.)

Coryphaenoides (not Gunner 1761) Lacépède, Hist. nat. Poiss., vol. 3, p. 219, 1802. (Type Coryphaenoides houttuyni Lacépède = Coryphaena japonica Houttuyn. monotypic.)

Latilus Cuvier, Hist. nat. Poiss., vol. 5, p. 368, Jan. 1830. (Type Coryphaena japonica Houttuyn. Designated by Jordan, Tanaka, Snyder, Journ. Coll. Sci., Tokyo, vol. 33, art. 1, p. 187, 1913.)

1344

Siganus canaliculatus (Mungo Park).

Chaetodon canaliculatus Mungo Park, Trans.
Linn. Soc. London, vol. 3, 1797, p. 33. Sumatra.

Amphacanthus canaliculatus Bleeker, Nat.
Tijds. Ned. Indie, deel 3, 1852, p. 580 (Padang).

— Bleeker, Act. Soc. Ind. Néerl., vol. 3, no. 9,
1857-8, p. 4 (Trussan, Sumatra). — Jouan,
Mem. Soc. Cherbourg, vol. 3, série 2, 1868, p. 267
(Hong Kong).

Terthis canaliculata Günther, Cat. Fish. Brit.
Mus., vol. 3, 1861, p. 316 (copied).

Terthis canaliculatus Fowler, Journ. Acad.
Nat. Sci. Phila., vol. 12, série 2, 1904, p. 546
(Padang).

Amphacanthus margaritiferus Valenciennes,
Hist. Nat. Poiss., vol. 10, 1831, p. 145. Amboina,

Vanicolo. — Schlegel and Müller, Verhand.
Nat. Ges. Zool., 1839-44, p. 10 (Vanikoro). —

— Richardson, Ichth. China Jap., 1846, p.

Body elongate, tapers back from head. Head rather elevated. Snout obtuse. Eye rather large. Mouth little inclined, jaws subequal. In jaws outer row of teeth little stronger, inner ones rather small. Premaxillaries usually with blunt, small, posterior canine. Hind preopercle edge finely denticulate. Gape and lips without adipose appendages. Branchiostegals 6. Air bladder simple. Scales moderate to small. Soft dorsal and anal rays in moderate number. Median pectoral ray longest, rays below abruptly shorter.

Species few, mostly in the Indo-Pacific.

Analysis of Species

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a.¹ Scales 60 to 76 in lateral series to caudal base.

b.¹ Sides with 20 to 22 pale transverse bands. japonicus.

b.² Body uniform.

c.¹ Cheeks with 7 rows of scales.

c.² Cheeks with 8 rows of scales, 3 median rows enlarged. tollardi.

c.³ Cheek with 10 rows of uniform scales. pilocanus.

d.¹ Large brown scapular blotch; 3 white lines radiate down from eye. vittatus.

d.² No scapular blotch; no white lines from eye. wardi.

a.² Scales 100 to 115 in lateral series to caudal base; numerous dark cross bars. stolatus.

b.³ Two parallel dark violet lines from head to caudal. sericus.

Branchiostegus japonicus (Houttuyn)

Coryphaena japonica Houttuyn, Verh.
Holland. maatsch. wet. Haarlem,
vol. 20, p. 311, 1782 (type locality,
Japan). — Gmelin, Syst. Nat.
Linn., vol. 1, p. 1194, 1788 (copied).
— Forster, Fauna Indica, p. 14,
1795 (reference).

Snyder, Proc. U. S. Nat. Mus., vol. 42, p. 417, 1912 (Tokyo; Shimizu).

Latilus japonicus Jordan and Snyder,
Proc. U. S. Nat. Mus., ^{vol. 23, p. 745, 1901 (reference);} vol. 24, p. 48,
1902 (Nagasaki). — Jordan, Tanaka,

Snyder, Journ. College Sci. Tokio,
vol. 33, p. 187, 1913 (reference). —

Izuka and Matsuura, Cat. Zool.
Spec. Tokyo Mus., Vert., p. 144,
1920 (Tokyo market).

Jordan and Richardson, Mem. Carnegie Mus.,
vol. 4, no. 4, p. 192, Aug. 28, 1908 (Tokyo; Yaman).

— Jordan and Thompson, Mem. Carnegie Mus., vol.
4, no. 4, p. 260, Sep. 1914 (Misaki, Osaka).

Siganus timifrons (Valenciennes).

Amphacanthus timifrons Valenciennes,

Hist. Nat. Poiss., vol. 50, 1835, p. ¹⁵⁹ 177. Shark's Bay, West Australia; Siam.

Genthis timifrons Günther, Cat. Fish. Brit.

Mus., vol. 3, 1861, p. 117 (copied). — Bleeker,

Ned. Tijds. Dierk., deel 2, 1865, p. 174 (Siam).

Depth $5\frac{1}{2}$ in total. Snout rather broad, convex. Caudal emarginate. Purple brown, dotted all over with very small whitish or bluish dots which extend on dorsal and anal. Caudal brown. Pectoral yellow. Ventral varied brown and white. Length 15-3 mm. (Valenciennes.)

— Chabanaud, Bull. Mus. Hist. Nat.,
Paris, vol. 30, p. 361, 1924 (reference).

Branchiostegius japonicus Fowler, Proc.
Acad. Nat. Sci. Philadelphia, vol. 77,
p. 249, 1925 (Katal coast; Tugela River);
vol. 81, p. 592, 1929 (Tokyo; Nagasaki),
p. 596 (Shanghai), p. 611 (Hong Kong);
vol. 86, p. 474, 1934 (Katal).

(Journ. Fac. Sci. Univ. Tokyo, vol. 3, pt. 1, p. 130, Nov. 4, 1931 (reference; synonymy);

— Tanaka { Japanese Fishes, p. 88, figs.
212 a - c, 1933 (Japan).

— Jordan and Hubbs, Mem. Carnegie Mus., vol. 10, No. 2, p. 248, June 27, 1925 (Tokyo; Mikawa Bay; Toyama; Shizuoka; Yokohama; Kobe; Misaki; Miyazu). — ~~Fowler, op. cit.~~ Barnard, Ann. South African Mus., vol. 21, pt. 2, p. 581, Oct. 1927 (Katal; Zululand; 20 to 60 fathoms).

— Fowler, op. cit.,

fuscescens.

66032. U.S.N.M. Panmotus. Albatross Collection. Length 351 mm. As Siganus punctatus.

71601. U.S.N.M. Naha, Okinawa, Riu Kiu Islands. Albatross Collection 1906. Length 135 mm. As Siganus fuscescens.

72008. U.S.N.M. Naha. Albatross Collection 1906. Length 118 mm.

84245. U.S.N.M. Zamboanga. Dr. Fred Baker. 4 examples. Length 138 to 163 mm.

82909 U.S.N.M. Fiji. Wilkes Exploring Expedition. Length 203 mm.

Coryphaenoides houttuyni Lacépède,
Hist. Nat. Poiss., vol. 3, p. 176, 1802
(on Houttuyn).

Coryphaena sinensis Lacépède, op. cit.,
pp. 176, 209 (type locality, "peintures chinoises"
= China).

Latilus sinensis Jordan and Snyder,
Proc. U. S. Nat. Mus., vol. 23, p. 369, 1900 (Tokyo).

Latilus ruber Kishinouye, Zool. Mag.,
vol. 19, p. 59, 1907. (Type locality Tokyo).
— Snyder, Proc. U. S. Nat. Mus., vol. 42, p. 417,
1912 (Tokyo; Kago-shima).

Latilus auratus Kishinouye, op. cit.

(type locality, Tokyo). — Jordan, Tanaka,
Snyder, Journ. College Sci. Tokio,
vol. 33, p. 188, 1913 (reference). —

Izuka and Matsura, Cat. Zool.
Spec. Tokyo Mus., Vert., p. 144, 1920
(Kochi, Toka). — Chabanaud, Bull.
Mus. Hist. Nat., Paris, vol. 30, p. 361,
1924 (reference).

1341
6368 and 10553. Jolo Island, Jolo.
March 7, 1908. Length 138 to 168 mm.

9160. Little Santa Cruz. May 26, 1908.
Length 202 mm.

21812. Pandanon Island. March 24, 1909.
Length 50 mm.

7681. Ulugan Bay, Palawan. December 28,
1908. Length 202 mm.

A1578. Hoo Wm, Eastern Formosa. January 29,
1910. Length 335 mm.

52502. U.S.N.M. Apia, Samoa. Bureau of
Fisheries. Length 252 mm.

58050. U.S.N.M. Zamboanga. Mr. E. A. Mearns.
2 examples. Length 175 to 188 mm. As Viganus
fuscescens.

65660. U.S.N.M. Mangareva. Albatross
Collection. Length 163 mm.

66031. U.S.N.M. Kusaie. Albatross Collection.
2 examples. Length 135 to 150? mm. As Viganus

Latilus argentatus Cuvier, Hist.
Nat. Poiss., vol. 5, pp. 369, ⁴¹³1830 (type
locality, "une peinture chinoise";
Mauritius).

— Schlegel, Fauna Japonica, Poiss.,
pts. 2-4, p. 63, pl. 28, fig. 2, 1842
(Chagasaki Bay).

— Bleeker, Verh. Batavia. Genoot.
(Nat. Ichth. Japan.), vol. 25, p. 12,
1853 (reference); (Nat. Ichth.
Japan.), vol. 26, pp. 5, 85, 1857
(Chagasaki); Act. Soc. Sci. Ind.
Néerl., vol. 3, no. 3, p. 5, 1857-58
(Japan). — Günther, Cat. Fish. Brit.
Mus., vol. 2, p. 252, 1860 (China). —
Bleeker, Rech. Faune Madagascar, Pollen et Van
Dam, pt. 4, p. 78, 1874 (reference).

Phila., 1923, p. 42 (Madagascar). —

Fowler, Bishop Mus. Bull., no. 22, 1925,
p. 34 (Samoa).

Tenuthis oligostictus Kner, Vitz. Abad.
Wiss. Wien, band 58, 1868, pp. 30³⁴⁵, plate 7, fig.

23. Kanathia, Viti Islands, Fiji.

Tenuthis vitiensis Sauvage, Bull. Soc. Philomath.
Paris, vol. 6, series 7, 1882, p. 173. Fiji.

Siganus fuscus (non Houttuyn) Seale
and Bean, Proc. U. S. Nat. Mus., vol. 33, 1907.

p. 247 (Zamboanga). — Kendall and Goldsborough,

Mem. Mus. Comp. Zool., vol. 26, no. 7, 1911, p.

313 (Kusaie, Caroline Islands). — Snyder,

Proc. U. S. Nat. Mus., vol. 42, 1912, p. 511

(Okinawa, Riu Kiu).

Siganus punctatus (non Schneider) Kendall
and Goldsborough, l.c., p. 313 (Nakemo,
Pannotus).

— Lystrom, Bih. Kon. Sv. Vet. Akad. Handl., Stockholm, band 13, afd. 4, no. 4, p. 29, 1888 (Nagasaki).

— Steindachner and Alcock, Denks. Akad. Wiss. Wien, math.-naturw. Kl., vol. 48, p. 25, 1884. — Steindachner, Ann. K. K. naturh. Hofmus. Wien, vol. 11, p. 208, 1896 (Kobe, Hiogo, Nagasaki).

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— Chabanaud, Bull. Mus. Hist.
Nat., Paris, vol. 30, p. 361, 1924
(reference).

35

Depth $3\frac{2}{5}$ to $3\frac{4}{5}$; head $3\frac{1}{3}$ to $3\frac{3}{5}$, width $2\frac{1}{3}$. Snout $2\frac{1}{2}$ in head; eye $4\frac{3}{4}$ to $5\frac{1}{8}$, $2\frac{1}{6}$ in snout, $1\frac{2}{5}$ in interorbital; maxillary reaches eye, expansion $2\frac{1}{8}$ in eye, length $2\frac{1}{3}$ to $2\frac{2}{5}$ in head; interorbital $3\frac{1}{2}$, convex; preopercle edge finely serrate. Gill rakers $7+13$, lanceolate.

Scales 61 to $63+8$ to 12 in lateral line; tubular scales 44 to $54+4$ or 5 in lateral line; 7 or 8 scales above, 14 to 18 below; 22 to 27 predorsal. Scales with 11 to 16 marginal striae, 8 to 30 submarginals; 30 to 72 apical points, with 3 or 4 rows of basal elements.

D. VII, 15, I, third spine 3 to $3\frac{2}{5}$ in head, thirteenth ray $1\frac{1}{2}$ to $1\frac{3}{4}$; A. II, 12, I, eleventh ray $1\frac{4}{5}$ to 2; caudal $1\frac{1}{4}$, slightly convex behind; pectoral $1\frac{1}{5}$; ventral 2.

Body with 22 to 22 violet, white and yellow transverse bands. Head violet rosy, with blue spots on cheeks. Eye pale olive and white. Dorsal rays red, anal yellow. Caudal yellow at base and deep rosy spot, rays yellow, pink and mauve. Ventral pale blue.

Zululand, Natal, Mauritius, China, Japan.

A. N. S. P., one example.

Natal coast, in 20 fathoms.

H. W. Bell Marley.

A. N. S. P., one example.

Tugela River, in 60 fathoms.

H. W. Bell Marley.

Branchiostegus tollardi (Chabanaud)

Latilus tollardi Chabanaud, Bull. Mus.
Hist. nat. Paris, p. 357, 1924 (type
locality, Annam
Côte d'

7967. Pagapas Bay, Luzon. February 20, 1909. Length 214 mm. Very dark brown, fading purplish above and white below, then showing numerous brassy or sulphur yellow spots about size of number 12 shot, somewhat larger at side medianly then lower disappearing; spots show very dimly through brown before fading. Three horizontal purplish stripes cross cheek merging in ground color on hind portion of head, upon which numerous rather larger spots. Fins show no markings, color like body; membranes of soft fins hyaline. Pectoral rays hyaline yellow.

A 715. Si Amil Island. September 27, 1909. Length 257 mm.

4891. Siasi Island, Jolo. February 17, 1908. Length 160 mm. "Banis" (Moro). Generally pale purplish blue, darker

Depth 4; head 4. Eye $3\frac{4}{5}$ in head; maxillary 2, reaches eye; preorbital equals $\frac{2}{3}$ of eye; hind preopercle edge finely serrated; upper teeth with outer little enlarged row, 4 anterior moderate canines, with inner band of small fine teeth, narrowing posteriorly; lower teeth with outer enlarged row and inner band of fine teeth and narrowing to a single row posteriorly. Gill rakers 8+12.

Scales 80 in lateral line, above, 70 in lateral line below; ^{tubes 55 in lateral line; scales} 6 above, 16 below; 7 rows on cheeks, with limb of preopercle naked.

D. VIII, 15, last rays end in a filamentous point reaching caudal base; A. II, 12, end of soft fin also reaches caudal base;

caudal largely scaly, trilobate, median lobe rounded and upper and lower pointed; pectorals rays 15, long as head; ventral shorter.

Red. Head indistinctly tinted with yellow. All dorsal region brownish. narrow yellow longitudinal bands along each row of scales. Black predorsal line forward to occiput. Dorsal membrane colorless, with a row of oblique black spots, forming series from base of first spine to the end of the eleventh ray. Anal colorless. Caudal red, yellowish basally, blackish terminally, also narrow line along its upper edge; Paired fins red. Length 270 mm. (Chabanaud.)

Annam.

Branchiostegus ilocanus Herre

Branchiostegus ilocanus Herre, Philippine
 Journ. Sci., vol. 35, ^{no. 1,} p. 32, ^{Jan.} pl. 3, 1928
 (type locality, market at Harvacan,
 Ilocos Sur Province, Luzon).

above. Back and sides with faint yellow lines, spots and vermiculations. Apparent line at base of soft dorsal violet. Dorsal rays and spines pale greenish, membranes anteriorly with greenish mottling, posteriorly hyaline. Caudal pale green, with 6 greenish cross bars, - darkest on upper and lower fin margins. Anal like dorsal. Pectoral pale yellow. Ventral rays bluish white, membranes mottled green and white.

A 462. Tulahtan Island. September 9, 1909. Length 275 mm.

11689. Tutu Bay, Jolo Island. September 19, 1909. Length 153 mm.

Depth $3\frac{3}{5}$; head $2\frac{9}{10}$.

Snout $2\frac{1}{3}$ in head; eye $4\frac{1}{4}$, $1\frac{3}{4}$ in snout, subequal with interorbital; maxillary reaches $\frac{2}{3}$ to eye, length 3 in head; upper teeth biserial except at 4 rows anteriorly, outer little enlarged and last ² each side hooked canines; lower teeth uniserial and enlarged at sides of jaw, and 3 rows in front; interorbital $4\frac{1}{3}$ in head, low, longitudinal groove in middle; preopercle edge denticulate.

Scales 60 in lateral line (not shown on figure); 25 transversely. Predorsal scales forward to front part of interorbital. Snout, jaws, suborbital and under side of

head naked. Fine scales on pectoral and on more than basal half of caudal. Cheeks with 8 rows of scales, 3 middle rows enlarged.

D. VII, 14 (~~figure shows VI, 14~~), first and second spines united, last spine 3 in head, twelfth ray $1\frac{1}{2}$; A. II, 11, second spine $3\frac{4}{5}$, sixth ray 2, caudal $1\frac{1}{4}$, obliquely truncate, with upper rays longest; least depth of caudal peduncle $2\frac{9}{10}$; pectoral $1\frac{1}{4}$; ventral $2\frac{1}{10}$.

Back and top of head dusky olive, sides and belly silvery. Black predorsal seam to front of interorbital. Snout and suborbital yellow, with triangular orange spot on lower median portion of snout.

Yellow basal band on dorsal.
Blackish marginal dorsal line
and upper pectoral margin.
Anal and paired fins colorless.
Olive brown triangle covers
lower third of caudal, apex
at lower side of caudal
peduncle; central longitudinal
olive brown band and marginal
line of olive brown above;
rest of fin yellowish. Length
270 mm. (Herve.)

Luzon.

45

Branchiostegus vittatus Herre

Branchiostegus vittatus Herre,
Philippine Journ. Sci., vol. 31, ^{no. 4,} p. 535,
Dec. ^{pl. 2,} 1926 (type locality, Manila
market).

[1919].

A 487 and A 488, 12242, ¹Lampinigan Island. September 11, 1909. Length 205 to 220 mm. General color of head and side purplish, reticulations enclosing olive areas fading to sulphur yellow; larger on back where about $\frac{1}{3}$ of pupil diameter and on lower side $\frac{1}{4}$ of pupil. Breast and belly slaty drab, without spots. Spinous dorsal and anal hyaline, more or less mottled with darker; rays of soft fins spotted with pale and dark live. Caudal more dusky. Pectoral pale yellow. Ventral like spinous dorsal.

9158, 9159, 7969. Little Santa Cruz, Zamboanga. May 26, 1908. Length 183 to 290 mm.

9296 to 9298. Murcielagos Bay. August 9, 1909. Length 238 to 277 mm.

12565, 12566, 17326, 20299, 20300. Near Palag Bay, Luzon. June 16, 1909. Length 183 to 235 mm.

Depth $3\frac{3}{4}$ to 4; head $3\frac{1}{2}$ to $3\frac{2}{3}$. Snout $2\frac{2}{3}$ to $2\frac{3}{4}$ in head; eye $3\frac{1}{2}$ to $3\frac{2}{3}$, $1\frac{1}{4}$ in snout, greater than interorbital; maxillary reaches $\frac{1}{2}$ in eye, length $2\frac{1}{8}$ in head; upper teeth with an outer enlarged row and 2 inner lower rows, with 4 short inner inner rows anteriorly in jaws, last of outer row small, hooked, forward pointed canine; lower teeth with outer strong row and 5 inner rows much smaller and reduced to one row posteriorly; interorbital low, nape as low longitudinal keel; hind preopercle edge finely denticulate. Scales 68 to 72 on lateral line; 22 transversely. Pre-dorsal scales extend forward half way in interorbital. Opercles

and cheek sealed forward
 far as perpendicular line from
 eye to mouth angle, and 10
 rows on preopercle.

D. VII, 15, last spine $3\frac{1}{5}$
 in head, thirteenth ray $1\frac{2}{5}$;
 A. II, 11, second spine 3, eleventh
 ray $1\frac{9}{10}$; caudal $1\frac{1}{4}$, convex
 behind; least depth of caudal
 peduncle $2\frac{9}{10}$; pectoral $1\frac{1}{3}$;
 ventral $2\frac{1}{5}$.

Silvery, with roseate flush
 along upper half of body.
 Snout deep pink. Pearl
 colored band crosses snout
 before eyes. From lower front
 eye edge wide pearly band,
 narrowing to upper lip; from
 opposite hind pupil edge
 silver band crosses cheek
 nearly vertically to throat.

Large dark brown spot above origin of lateral line. Black longitudinal line on middle of ridge crowning nape. Dorsal spines with black margin. Upper part of entire dorsal yellow, with basal pearly band its whole length. Caudal with 6 yellow bands on upper $\frac{2}{3}$, running back and a little diagonally upward, lowest one separated from the rest. Each scale above lateral line with a small dark spot, forming longitudinal rows. Below lateral line pearly spot on each scale, also forming faint lines. Length 240 mm. (Herve.)
Luzon.

49

Branchiostegus wardi Whitley

Branchiostegus wardi Whitley, Rec.
Austral. Mus., vol. 18, ^{no. 6,} p. 335, pl. 39,
^{April 20,} fig. 3, 1932 (type locality, Off Port
Stephens, New South Wales, in 50 to
60 fathoms).

dusky violet, nearly violet black.
Side under and above pectoral
extended with vertical lines of smoky
purplish, below and behind forming
regular network. On back ground
color appears as spots in more regular
broad network of purplish, somewhat
as on top of head. Dorsal olivaceous,
rays with pale spots. Anal like dorsal,
markings less distinct. Caudal rather
olivaceous, more or less clouded with
purplish basally. Pectoral very pale
hyaline yellow. Ventral dusky and
whitish.

A 492. Isabela River. September 11, 1909.
Length 70 mm.

10552. Jolo. March 7, 1908. Length
240 mm.

15525. Langa Point, Luzon. June 24,
1909. Length 243 mm.

50

Depth $3\frac{4}{5}$; head $3\frac{1}{5}$. Snout $2\frac{2}{3}$ in head; eye $4\frac{2}{3}$, $1\frac{7}{8}$ in snout, longer than interorbital; maxillary apparently reaches eye, length $2\frac{3}{4}$ in head; an outer row of small canines and an inner band of villiform teeth in each jaw; interorbital low; top of head before interorbital soft and tumid; predorsal with low crest. Lower gill rakers 14.

Scales 76 in lateral line to caudal base; 8 above, 23 below. Cheek with 10 transverse rows of scales.

D. VII, 15, seventh spine $2\frac{1}{2}$ in head, twelfth ray $1\frac{4}{5}$; A. II, 11, second spine $4\frac{1}{8}$, tenth ray 2; caudal $1\frac{1}{4}$ (apparently double concave

57

behind?); least depth of
caudal peduncle $2\frac{3}{5}$; pectoral
 $1\frac{1}{2}$, rays I, 17; ventral I, 5,
fin 2 in head.

Light brownish above,
shading white below, without
defined cross bands. Crest of
head, suprascapula, pectoral
base and axilla yellow. Some
faint orange or yellow blotches
along lateral line. Front of
head faint lavender. Eye
milky bluish. Dorsals grayish,
with yellow along base and
disposed irregularly on
membranes; narrow smoky
inframarginal stripe. Anal
and ventrals uniform smoky
gray. Uppermost caudal
rays gray; most of upper
lobe yellow, brightest on

sixth ray; seventh and part
of eighth ray gray; an
oblique bright yellow band
crosses base of lower lobe
and extends along parts of
eighth and ninth rays; lowest
part of lobe dark grayish,
with whitish margin below.
Pectoral light gray, with
narrow black margin to
first 2 rays. Length without
caudal 330 mm. (Whitley.)

New South Wales.

53

Branchiostegus doliatus (Cuvier)

Latilus doliatus Cuvier, Hist.

Nat. Poiss., vol. 5, p. 375, pl. 130,
1830 (type locality, Mauritius).

— Günther, Cat. Fish. Brit.
Mus., vol. 2, p. 253, 1860 (Mauritius).

— Bleeker, Rech. Faune Madagascar,
Pt. 4, p. 78, 1874 (reference). —
Sauvage, Hist. Nat. Madagascar,
Poiss., p. 517, 1891 (reference).

— Gilchrist and Thompson, Ann.
 South African Mus., vol. 6¹³, pt. 3,
 p. 70, May 7, 1914 (off Natal
 coast, in 50 fathoms; Tugela
 River mouth, N. $19\frac{1}{2}$ miles) ; ~~xx~~
 Ann. Durban Mus., vol. 1, pt. 4,
 p. 348, May 21, 1917 (reference).

→ Barnard, Ann. South African
 Mus., vol. 21, pt. 2, p. 502, pl. 21,
 fig. 3 (copied) (Natal, 50 to 183
 fathoms).
Branchiostegus doliaetus.

55

Latilus doleatus Swainson,
Nat. Hist. Animals, vol. 2, p.
219, 1839 (reference).

56

Depth $3\frac{1}{3}$ to $3\frac{2}{3}$; head $3\frac{2}{3}$ to $3\frac{4}{5}$. Snout 3 in head; eye $2\frac{4}{5}$ to 3, subequal with snout or interorbital; maxillary reaches $\frac{2}{5}$ in eye, length $2\frac{2}{5}$ in head; canine teeth at symphysis of jaw, on hind end of lower jaw, and one at hind end of upper jaw; interorbital low. Lower gill rakers 10 or 11.

D. IV, 15 or 16, third ray 2 in head; A. II, 12, third ray $2\frac{2}{5}$; caudal 1; truncate or slightly emarginate; least depth of caudal peduncle $2\frac{4}{5}$; pectoral 1; ventral $2\frac{1}{4}$.

Rose colored, silver, with numerous, dark, vertical cross bars on upper part of body. A dark opercular spot. Length 350 mm. (Barnard.)

57
Latal, Mauritius. Gilchrist
and Thompson give the scales 102
in a lateral count, 8 above and
29 below.

Branchiostegus doliatus (Cuvier)

Latilus doliatus Cuvier, Hist. nat.

Pois., vol. 5, p. 375, pl. 130¹⁸³⁰ (type
locality, Mauritius).

— Günther,
Cat. Fish. Brit. Mus., vol. 2,
p. 253, 1860 (Mauritius). —

— Sauvage, Hist. nat. Madagascar,
Pois., p. 517, 1891 (reference).

~~(Swainson, Nat. Hist. Animals,
vol. 2, p. 219, 1839 (reference))~~

— Bleeker, Rech. Faune Madagascar,
Pollen et Van Dam, pt. 4, p. 78,
1874 (reference).

Latilus doliatus Swainson, Nat. Hist.
Animals, vol. 2, p. 219, 1839 (reference).

Branchiostegus sericus Herre

Branchiostegus sericus Herre,
Hong Kong Naturalist, vol. 6, nos. 3-4,
p. 285, Dec. 4, 1935 (type locality,
Hong Kong market).

59

Depth 4, anterior profile boldly marked, with marked keel from dorsal origin to middle of interorbital; head $3\frac{2}{3}$. Snout $2\frac{4}{7}$ in head; eye $3\frac{9}{10}$, $1\frac{1}{2}$ in snout, 1 in interorbital; maxillary extends below hind edge of pupil, length $2\frac{1}{3}$ in head; suborbital $5\frac{1}{10}$ ~~min~~; hind edge of preopercle denticulate. Gill rakers $6 + 13$.

Scales 70 to 72 in lateral series to caudal base; $50 + 4$ tabulated scales in lateral line; 24 scales transversely to anal origin; 8 rows on ^{pre}opercle.

D. VIII - 14, origin over upper end of pectoral base, first spine $3\frac{1}{3}$ in head, second spine $2\frac{3}{5}$, twelfth ray $1\frac{2}{5}$; A.

II - 12, twelfth ray reaches caudal

60

when depressed or $5\frac{1}{10}$ in fish without caudal, eleventh ray $1\frac{9}{10}$ in head or 7 in fish without caudal.

Dusky violaceous above lateral line, silvery below, becoming yellow on cheeks, chin and throat, with pink or roseate flush over all and violet glints wherever light strikes at a different angle. Two parallel dark violet lines run from head to caudal, one on lateral line, other on second row of scales above; each scale between this line and dorsal fin with deep violet center; from anterior margin of eye yellow pearly band descends slightly backward to maxillary; from margin of eye beneath pupil similar stripe runs nearly to

angle of maxillary; on tip of snout above upper lip large broad violet black spot. On nape before first dorsal large elongate black blotch, equals eye; extends up first dorsal spine. On upper half of soft dorsal row of elongate very dark violet spots, one between each 2 rays; between first and third rays a very large violet black spot covering nearly whole membrane. Pectoral yellow basally, rest of fin pale violet. Caudal dusky violet, upper half with yellow longitudinal stripes between rays. Pectoral smudged with dusky violet on its upper median portion and on its tip, rest yellow. Ventrals yellow. Length 245 mm. (Herre.)
China.

Genus Lopholatilus Goode and Bean

Lopholatilus Goode and Bean, Proc.
~~Acad.~~ U. S. Nat. Mus., vol. 2, p. 205,
(1880) 1879, (Type Lopholatilus chamaeleonticeps Goode and Bean,
monotypic.)

1300

all pale or light brownish generally,
inclining to yellowish.

Serchelles, East Indies, Philippines, Pin
Kul, Indonesia. Our examples quite vari-
able in the size and disposition of the
spots on the body. In some they are
very sparse over the body, scattered
thinly over the trunk and tail, hardly
any or none on the costal region. In
others they may be exceedingly numerous,
close-set and very small over the
trunk and tail anteriorly. In young
examples the spots are proportionately
large and similar to those on the head.
In all examples the spots are well
developed, similarly large, crowded
and conspicuous on the head.

Tenthis tenthopsis De Vis is based on
an example about 202 mm. long and though
its proportions do not altogether agree
its color pattern seems applicable. It
is said to have the lower part of the
head, chest and fore part of the trunk
with rather large, pale, dark edged
spots, most conspicuous on the opercle,

Body elongately ovate, compressed. Head large, deep, well compressed, sides flattened. Snout long, high. Eye small, high, midway in length of head. Mouth large, low, or little inclined and lower jaw protruding. Maxillary reaches far as eye. Upper teeth with an outer enlarged series followed by an inner band of villiform teeth; lower teeth with an outer enlarged row, canine like and an inner band of conic teeth. No teeth on palate. Fleshy prolongation on each side of labial fold, extends back beyond angle of mouth. Long pointed adipose appendage on predorsal. Scales small. Caudal scaly basally. Cheeks and opercles with small scales.

64

Lateral line high, complete to caudal base. Dorsals continuous, spines few. Anal with still fewer spines, soft fin like soft dorsal. Caudal emarginate. Paired fins less than head.

~~One~~^{Two} species in the ~~north~~ western Atlantic in deep water. Large, handsome fishes and valuable as food. Vast numbers have been found floating on the waves, evidently having been destroyed by temperature changes in 1882. The fish then disappeared and were not found until a decade later.

Lopholatilus villarii Miranda-Ribeiro

Lopholatilus villarii Miranda-Ribeiro,
Arch. Mus. Nac. Rio de Janeiro,
vol. 17, pt. 1, p. 510, ^{date?} (Praça
do Mercado, Brazil).

65

Lopholatilus chamaeleonticeps Goode
and Bean

- Lopholatilus chamaeleonticeps Goode
and Bean, Proc. U. S. Nat. Mus.,
(1880)
vol. 2, p. 205, 1879, (type locality,
N. lat. 40° , W. long. 70° , 80 miles
south by east of Roman's Land in
84 fathoms).
- Jordan and Gilbert, Bull. U. S. Nat.
Mus., no. 16, p. 624, 1883 (copied). —
- Goode, Rep. Fisher. Indust. U. S.,
p. 360, pl. 117, 1884.
- Lucas, Rep. U. S. Nat. Mus., p. 647, pl., 1889. —
- Goode and Bean, Oceanic Ichth.,
p. 284, pl. 75, fig. 265, 1895 (Gulf
Stream).
- Jordan and Evermann, Bull. U. S.
Nat. Mus., no. 47, pt. 3, p. 2278, 1898.
(copied).

1299

Depth 2 to $2\frac{1}{4}$; head $3\frac{1}{4}$ to $3\frac{3}{5}$, width
2 to $2\frac{1}{4}$. Snout $1\frac{4}{5}$ to 2; eye 3 to 4, $1\frac{2}{3}$
to $2\frac{1}{8}$ in snout, ~~1 to $1\frac{1}{8}$ in interorb-~~
ital; teeth about 32 in jaws; maxillare
4 to $4\frac{1}{2}$ in head; interorbital $2\frac{1}{4}$ to $3\frac{1}{10}$,
broadly and slightly convex; preopercle
flange, opercle and scapular arch striate.
Gill rakers 4 + 18, short, cuneate points.

Scales minute, ovoid, cycloid, circuli
with 28 to 33 circuli. Behaving rather
long, entire median area. Cheek, excepting
upper preorbital region, covered with
numerous small scales; squamous area
equally extensive in young.

D. XIII, 10, I, first spine $1\frac{2}{3}$ to $2\frac{1}{10}$
in head, fourth ray $1\frac{2}{5}$ to $1\frac{2}{3}$; A. VII, 9, I,
third spine $1\frac{2}{3}$ to 2, second ray $1\frac{3}{4}$ to $1\frac{7}{8}$,
caudal deeply forked, $2\frac{1}{5}$ to $3\frac{3}{4}$ in com-
bined head and body; least depth of
caudal peduncle, $3\frac{1}{4}$ to $4\frac{1}{8}$ in head;
pectoral $1\frac{1}{5}$ to $1\frac{1}{3}$; ventral $1\frac{1}{2}$ to $1\frac{3}{5}$.

Light brown generally, head, trunk
and tail everywhere with small light
blue-gray ocelli bordered with deeper
brown, variable and usually most
distinct and largest on head and
trunk anteriorly. Along breast, belly and
lower basal region of spinous, a few
spots as bars or short lines with irregu-
lar or semi-waved appearance. Spots
also extend out on caudal base somewhat
and slightly on dorsals and anals in
some examples. Iris pale yellowish. Fins

— Fowler, Rep. N. J. State Mus., p.
340, pl. 68 (copied), 1905 (1906)
(N. Lat. $40^{\circ} 7'$, W. Long. $69^{\circ} 34' 30''$, in
600 fathoms).

— Summer, Osburn, Cole, Bull. Bur.
Fishes, vol. 31, pt. 2, p. 767, 1911 (1913)
(border of Gulf Stream).

1297

Ann. Soc. Espan. Hist. Nat. Madrid, vol. 4, 1885, p. 22 (Rubi, New Guinea). —

Fowler, Journ. Acad. Nat. Sci. Phila., vol. 12, series 2, 1904, p. 546 (Padang).

Tenthis corallinus Playfair, Fishes of Zanzibar, 1866, p. 50 (Seychelles).

Siganus corallinus Jordan and Richardson, Bull. Bur. Fisher., vol. 27, 1907 (1908), p. 271

(Cagayanillo). — Snyder, Proc. U. S. Nat. Mus., vol. 42, 1912, p. 511 (Okinaawa). —

Fowler, Proc. Acad. Nat. Sci. Phila., 1918, p. 69 (Philippines; Padang). — Fowler, Copeia, no. 58, June 18, 1918, p. 64 (Philippines). —

Fowler and Bean, Proc. U. S. Nat. Mus., vol. 62, 1922, p. 58 (Zamboanga; Padang).

Tenthis studeri Peters, Monatsh. Abad. Wiss. Berlin, 1876 (1877), p. 834. New Britain.

Tenthis ^{gibbosus} ~~testa~~ apex de Vis, Proc. Linn. Soc. New South Wales, vol. 9, 1884 (1885), p. 46. Queensland Coast.